

What is claimed is:

1. A capsule endoscope apparatus having an illuminating device, an image pick-up device for picking up an image of an illuminated portion, and a radio transmitting device, the capsule endoscope apparatus comprising:

the illuminating device comprising a switching device which switches two or more light-emitting amount or light-emitting time; and

a radio device which transmits by radio waves image data obtained by the image pick-up device upon sequentially switching the two or more light-emitting amount or light-emitting time.

2. A capsule endoscope apparatus according to Claim 1 further comprising:

a setting device which sets the light-emitting amount or light-emitting time.

3. A capsule endoscope apparatus according to Claim 2, wherein the setting device is a storing device which stores information for setting the light-emitting amount or light-emitting time.

4. A capsule endoscope apparatus according to Claim 1,

wherein the illuminating device comprises a white LED.

5. A capsule endoscope apparatus according to Claim 1, wherein the illuminating device comprises an electroluminescence.

6. A capsule endoscope apparatus according to Claim 1, wherein a signal gain of the image pick-up device is proportional to the light-emitting amount or light-emitting time.

7. A capsule endoscope apparatus having an illuminating device, an image pick-up device for picking up an image of an illuminated portion, and a radio transmitting device, the capsule endoscope apparatus comprising:

the illuminating device comprising a switching device which switches two or more light-emitting amount or light-emitting time;

a selecting device which extracts an image with a wide dynamic range from the two or more pieces of image data obtained by the image pick-up device upon sequentially switching the two or more light-emitting amount or light-emitting time; and

a radio device which transmits by radio waves the image data obtained by the selecting device.

8. A capsule endoscope apparatus according to Claim 7, wherein the luminance distribution of the image data is used as a comparison standard for extracting the image with the wide dynamic range by the selecting device.

9. A capsule endoscope apparatus according to Claim 8, wherein the selecting device selects the image data with the widest luminance distribution of the image data.

10. A capsule endoscope apparatus according to Claim 7, wherein the amount of data after compressing the image data is used as a comparison standard for extracting the image with the wide dynamic range by the selecting device.

11. A capsule endoscope apparatus according to Claim 10, wherein the selecting device selects the image having the largest amount of the compressed image data.

12. A capsule endoscope system having an illuminating device, an image pick-up device for picking up an image of an illuminated portion, and a radio transmitting device, the capsule endoscope system comprising:

the illuminating device comprising a switching device which switches two or more light-emitting amount or light-

emitting time;

a selecting device which transmits two or more pieces of image data obtained by the image pick-up device by the radio transmitting device upon sequentially switching the two or more light-emitting amount or light-emitting time, and extracts the image with the wide dynamic range from the two or more images transmitted by the radio transmitting device; and

a recording device which records the transmitted image data selected by the selecting device.

13. A capsule endoscope system according to Claim 12, wherein the luminance distribution of the transmitted image data is used as a comparison standard for extracting the image with the wide dynamic range by the selecting device.

14. A capsule endoscope system according to Claim 13, wherein the selecting device selects the transmitted image data with the largest luminance distribution of the transmitted image data.

15. A capsule endoscope system according to Claim 12, wherein the amount of data after compressing the transmitted image data is used as a comparison standard for extracting the image with the wide dynamic range by the selecting

device.

16. A capsule endoscope system according to Claim 15, wherein the selecting device selects the image having the largest amount of the compressed and transmitted image data.

17. A capsule endoscope system having an illuminating device, an image pick-up device for picking up an image of an illuminated portion, and a radio transmitting device, the capsule endoscope system comprising:

the illuminating device comprising a switching device which switches two or more light-emitting amount or light-emitting time;

a radio device which transmits by radio waves two or more image data obtained by the image pick-up device upon sequentially switching the two or more light-emitting amount or light-emitting time;

an image processing device which generates one piece of combined image with an enlarged dynamic range from two or more pieces of image data;

a memory device which stores the combined image; and

a display device which displays the combined image.

18. A capsule endoscope apparatus having an illuminating device, an image pick-up device for picking up

an image of an illuminated portion, and a radio transmitting device, the capsule endoscope apparatus comprising:

the illuminating device comprising a switching device which switches two or more light-emitting amount or light-emitting time;

an image processing device which generates one combined image with an enlarged dynamic range from two or more pieces of image data obtained by the image pick-up device upon sequentially switching the two or more light-emitting amount or light-emitting time; and

a radio device which transmits by radio waves the combined image.

19. A capsule endoscope apparatus having an illuminating device, an image pick-up device for picking up an image of an illuminated portion, and a radio transmitting device, the capsule endoscope apparatus comprising:

the illuminating device comprising a switching device which switches the amount of illuminating light emitted by a light-emitting device; and

the radio transmitting device which transmits by radio waves a plurality of pieces of image data obtained by the image pick-up device with two or more different amount of illuminating light.

20. A capsule endoscope apparatus according to Claim 19, wherein the illuminating device has a plurality of light-emitting elements at different arranging positions, and the switching device selects the light-emitting element which emits light from the plurality of light emitting element and changes the property of light distribution for the illuminating light.